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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,393

04/09/2004

Anders Landin

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EXAMINER

ELAND, SHAWN

ART UNIT

PAPER NUMBER

2188

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/821,393

Applicant(s)

LANDIN ET AL.

Examiner

Shawn Eland

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004, 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/11/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 8 – 9, 22 & 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 – 9 contain the element "the other node". Claims 8 – 9 recite the limitation "the other node" in line 4 for claim 8 & line 3 for claim 9. There is insufficient antecedent basis for this limitation in the claims. For the purposes of applying art, the Examiner will assume the element is "another node."

Claims 22 & 29 recite the limitation "the additional node" in line 8 of claim 22 and line 6 of claim 29. There is insufficient antecedent basis for this limitation in the claim. For the purposes of applying art, the Examiner will assume that the element in claim 22 is "an additional node."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by *Liencre*s (US 5,434,993).

In regards to claim 1, Liencres teaches a plurality of active devices (*see elements 21, 31 & 32*); an interface to an inter-node network coupling nodes in the multi-node system (*see element 31*); and an address network configured to convey address packets between the interface and the plurality of active devices (*see element 33*); wherein an active device of the plurality of active devices is configured to send an address packet on the address network to initiate a transaction to gain an access right to a coherency unit (*see column 6, lines 38 – 49*); wherein in response to the address packet, the interface is configured to send data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node (*see column 6, lines 50 – 60*).

In regards to claim 11, Liencres teaches a node comprising a plurality of active devices (*see elements 21, 31, & 32*), an interface to an inter-node network (*see element 31*), and an address network configured to convey address packets between the interface and the plurality of active devices (*see element 33*); an additional node coupled to the node by the inter-node network (*see figure 3a; see column 6, 13 – 15*); wherein an active device of the plurality of active devices is configured to send an address packet on the address network to initiate a transaction to gain an access right to a coherency unit (*see column 6, lines 38 – 49*); wherein in response to the address packet, the interface is configured to send data corresponding to the coherency unit to

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the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node **(see column 6, lines 50 – 60)**.

In regards to claim 21, Liencres teaches an active device of a plurality of active devices included in the node sending an address packet on the address network to initiate a transaction to gain an access right to a coherency unit **(see column 6, lines 38 – 49)**; in response to the address packet, an interface to the inter-node network included in the node sending data corresponding to the coherency unit to the active device if no other active device in the node has an ownership responsibility for the coherency unit and the coherency unit is in a modified global access state in the node **(see column 6, lines 50 – 60)**.

Regarding claims 2 & 12, Liencres teaches wherein the interface includes storage for a plurality of records, wherein each of the plurality of records corresponds to a respective one of a plurality of address packets conveyed on the address network **(see column 9, lines 32 – 47)**; wherein the interface is configured to search the storage for records specifying the coherency unit in response to the interface receiving a request for access to the coherency unit from the additional node via the inter-node network **(see column 9, lines 14 – 31)**; wherein the interface is configured to send the data corresponding to the coherency unit if one of the records indicates that no active device in the node has the ownership responsibility for the coherency unit and the coherency unit is in the modified global access state in the node **(see column 6, lines 50 – 60)**.

Regarding claim 22, Liencres teaches the interface storing a plurality of records, wherein each of the plurality of records corresponds to a respective one of a plurality of address packets conveyed on the address network (**see column 9, lines 32 – 47**); in response to the interface receiving a request for access to the coherency unit from the additional node via the inter-node network, the interface searching the plurality of records for records specifying the coherency unit (**see column 9, lines 14 – 31**); the interface sending the data corresponding to the coherency unit if one of the records specifying the coherency unit indicates that no active device in the node has the ownership responsibility for the coherency unit and the coherency unit is in the modified global access state in the node (**see column 6, lines 50 – 60**).

Regarding claims 3, 13, & 23, Liencres teaches wherein the one of the records corresponds to a write back address packet sent to initiate a write back transaction for the coherency unit, wherein the coherency unit does not map to any memory subsystem included in the node (**see column 9, lines 14 – 31**).

Regarding claims 4 & 14, Liencres teaches wherein the address network is configured to convey the write back address packet in broadcast mode, and wherein one of the plurality of active devices that sends the write back address packet is configured to lose the ownership responsibility for the coherency unit in response to receiving the write back address packet (**see column 4, lines 40 – 62**).

Regarding claim 24, Liencres teaches the address network conveying the write back address packet in broadcast mode; and one of the plurality of active devices that sent the write back address packet losing the ownership responsibility for the coherency

unit in response to receiving the write back address packet (**see column 4, lines 40 – 62**).

Regarding claims 5 & 15, Liencres teaches wherein in response to the one of the records, the interface is configured to send a pull request to one of the plurality of active devices that initiated the write back transaction; wherein in response to the pull request, the one of the plurality of active devices is configured to send the data corresponding to the coherency unit to the interface (**see column 9, lines 43 – 47; see figure 3b**).

Regarding claim 25, Liencres teaches in response to the one of the records, the interface sending a pull request to one of the plurality of active devices that initiated the write back transaction; in response to the pull request, the one of the plurality of active devices sending the data corresponding to the coherency unit to the interface (**see column 9, lines 43 – 47; see figure 3b**).

Regarding claims 6 & 16, Liencres teaches wherein the one of the plurality of active devices is configured to transition an access right to the coherency unit upon sending the data (**see column 9, lines 32 – 47; the 3 states show what the access right is**).

Regarding claim 26, Liencres teaches further comprising the one of the plurality of active devices transitioning an access right to the coherency unit upon sending the data (**see column 9, lines 32 – 47; the 3 states show what the access right is**).

Regarding claims 7 & 17, Liencres teaches wherein the active device is configured to send the address packet to initiate a read-to-own transaction, and wherein the interface is configured to send the data corresponding to the coherency to the active

device in response to accessing one of the plurality of records corresponding to the address packet and in response to receiving the data from the one of the plurality of active devices that initiated the write back transaction (**see column 9, lines 1 – 8**).

Regarding claim 27, Liencres teaches wherein said the active device sending the address packet comprises the active device sending the address packet to initiate a read-to-own transaction (**see column 9, lines 1 - 8**); wherein said the interface sending the data corresponding to the coherency unit to the active device occurs in response to the interface accessing one of the plurality of records corresponding to the address packet and receiving the data from the one of the plurality of active devices that initiated the write back transaction (**see column 9, lines 1 – 8**).

Regarding claims 8 & 18, Liencres teaches wherein the active device is configured to gain an ownership responsibility for the coherency unit in response to receiving the address packet (**see column 9, lines 1 – 8; see figure 3b**), wherein the interface is configured to send a proxy address packet on the address network in response to receiving the request from the additional node (**see column 6, lines 38 – 52**), wherein the active device is configured to store a promise corresponding to the proxy address packet in a promise array included in the active device in response to receiving the proxy address packet while having the ownership responsibility for the coherency unit (**see element 46**).

Regarding claim 28, Liencres teaches the active device gaining an ownership responsibility for the coherency unit in response to receiving the address packet (**see column 9, lines 1 – 8; see figure 3b**); the interface sending a proxy address packet on

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the address network in response to receiving the request from the additional node (**see column 6, lines 38 – 52**); and the active device storing a promise corresponding to the proxy address packet in a promise array included in the active device in response to receiving the proxy address packet while having the ownership responsibility for the coherency unit (**see element 46**).

Regarding claims 9 & 19, Liencres teaches wherein in response to the promise, the active device is configured to send data corresponding to the coherency unit to the interface, and wherein the interface is configured to supply the data to the additional node in response to the request upon receiving the data from the active device (**see column 7, “Read Transactions”**).

Regarding claim 29, Liencres teaches in response to the promise, the active device sending data corresponding to the coherency unit to the interface; and the interface supplying the data to the additional node in response to the request upon receiving the data from the active device (**see column 7, “Read Transactions”**).

Regarding claim 10, Liencres teaches wherein the one of the records corresponds to a write stream address packet sent to initiate a write stream transaction for the coherency unit (**see column 9, lines 32 – 47**).

Regarding claims 20 & 30, Liencres teaches wherein the one of the records corresponds to a write back address packet sent to initiate a write stream transaction for the coherency unit (**see column 9, lines 32 – 47**).

Examiner Information

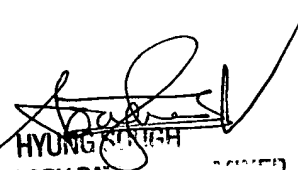
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Eland whose telephone number is (571) 270-1029. The examiner can normally be reached on Monday - Thursday from 7:30am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough, can be reached on (571) 272-4199. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawn Eland
01/09/07



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SUPERVISORY PATENT EXAMINER
1-9-07